

* =mandatory field)

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- **Dataset_Info:***
 - Dataset_ID*: [TAO170W_0N_Jul2005_Jun2006](#)
 - **Submission_Dates:***
 - Initial_Submission: [20101028](#) (YYYYMMDD)
 - Revised_Submission: (YYYYMMDD)
- **Cruise_Info:***
 - **Experiment:**
 - Experiment_Name*:
 - **Cruise:(-)**
 - Cruise_ID: (EXPOCODE)
 - Section: (Leg)
 - **Geographical_Coverage:***
 - Geographical_Region:
 - **Bounds:**
 - Westernmost_Longitude:
Enter decimal fractions of degrees:
or Degrees, Minutes, Seconds:
 - Easternmost_Longitude:
Enter decimal fractions of degrees: [-170.04](#) (+ = E, - = W)
or Degrees, Minutes, Seconds:
 - Northernmost_Latitude:
Enter decimal fractions of degrees: [-0.03](#) (+ = N, - = S)
 - Southernmost_Latitude:
Enter decimal fractions of degrees:
 - **Temporal_Coverage:**
 - Start_Date: [20050704](#) (YYYYMMDD)
 - End_Date: [20060623](#) (YYYYMMDD)
 - **Vessel:*** [Mooring platform](#)
 - Vessel_Name:
 - Vessel_ID:
 - Country:
 - Vessel_Owner:
- **Variables_Info:***
 - **Variable:**
 - Variable_Name and Description*:
- [xCO₂ SW \(wet\) \(umol/mol\) - Mole fraction of CO₂ in air in equilibrium with the seawater at sea surface temperature and measured humidity.](#)
- [CO₂ SW QF – Quality Flag for xCO₂ SW \(wet\).](#)
- [H₂O SW \(mmol/mol\) - Mole fraction of H₂O in air from equilibrator .](#)
- [xCO₂ Air \(wet\) \(umol/mol\) - Mole fraction of CO₂ in air from airblock, 4 feet above the sea surface at measured humidity.](#)
- [CO₂ Air QF – Quality Flag for xCO₂ Air \(wet\)](#)
- [H₂O Air \(mmol/mol\) - Mole fraction of H₂O in air from airblock, 4 feet above the sea surface.](#)

- Licor Atm Pressure (hPa) – Atmospheric pressure at the airblock, 4 feet above the sea surface
- Licor Temp (C) – Temperature of the Infrared Licor 820 in degrees Celsius
- % O₂ - The percent oxygen of the surface seawater divided by the percent oxygen of the atmosphere at 4 feet above the sea surface. Disclaimer: The oxygen measurement is made in the equilibrated air. We have found that the oxygen does not come to complete equilibrium so any rapid changes in oxygen do not get properly captured using this system. Therefore, we tend to use the oxygen data only as a qualitative sense of the biology. It is not a quantitative measure.
- SST (C) - Sea Surface Temperature collected by NOAA/PMEL/TAO provide internally recorded SST data at 10 minute resolution. The sea surface temperature collected during the equilibration period is reported in this dataset. NOAA/PMEL/TAO advises to check the TAO site at the time of use for the most accurate data available.
- Salinity - Sea Surface Salinity collected by NOAA/PMEL/TAO. Papa records conductivity data at 10 minute intervals and then computes hourly averaged salinity during post-processing. The salinity reported during the equilibration period is reported in this dataset. NOAA/PMEL/TAO advises to check the TAO site at the time of use for the most accurate data available.
- xCO₂ SW (dry) (umol/mol) – Mole fraction of CO₂ in air in equilibrium with the seawater at sea surface temperature (dry air).
- xCO₂ Air (dry) (umol/mol) – Mole fraction of CO₂ in air at the airblock, 4 feet above the sea surface (dry air).
- fCO₂ SW (sat) uatm – Fugacity of CO₂ in air in equilibrium with the seawater at sea surface temperature (100% humidity). Since the measurements are taken at the sea surface, warming calculations are not necessary.
- fCO₂ Air (sat) uatm – Fugacity of CO₂ in air at the airblock, 4 feet above the sea surface (100% humidity).
- dfCO₂ – Difference of the fugacity of the CO₂ in seawater and the fugacity of the CO₂ in air (fCO₂ SW - fCO₂ Air).

- **Method_Description:***

- **Equilibrator_Design:**

- Equilibrator_Type: (show pick list) Bubble Equilibrator
 - Equilibrator_Volume: (L) N/A
 - Water_Flow_Rate: (L/min) N/A
 - Headspace_Gas_Flow_Rate: (L/min) ~600 cc/min
 - Vented: (show pick list) Yes

- Measurement_Method: Absolute, non-dispersive infrared (NDIR) gas analyzer

- Manufacturer_of_Calibration_Gas: NOAA Earth System Research Laboratory (ESRL)

- **CO₂_Sensors:**

- **CO₂_Sensor:**

- Manufacturer: Licor
 - Model: Environmental_Control: LI-820
 - Resolution: 0.01 ppm
 - Uncertainty: < 2.5% of reading with 14 cm bench (stated)
<1.5 ppm determined in lab
 - CO₂_Sensor_Calibration: (For each calibration gas, document traceability to an internationally recognized scale, including date and place of last calibration. Include uncertainty of assigned value.)

At the beginning of each sample, the instrument self-calibrates using a zero and high standard. The zero standard is generated by cycling a small amount of air through a soda lime chamber. The high standard is from a cylinder of calibrated standard reference gas, 512.61 umol/mol, from ESRL. ESRL

standards are traceable to WMO x93 scale with a stated reproducibility of 0.06 micromole/mole.

- **Other_Sensors:**
 - Manufacturer: Oxygen Sensor
 - Model: Maxtec
 - Resolution: Max-250
 - Uncertainty: 0.01 %
 - range: $\pm 2.0\%$ Full Scale over operating temperature
 - pressure: $\pm 1.0\%$ Full Scale @ constant temperature and pressure
 - Calibration: (For each sensor of pressure, temperature, and salinity, document traceability to an internationally recognized scale, including date and place of last calibration.)
Factory calibrated before purchase. Recalibrated to sea level atmospheric air immediately before the deployment.
- **Other_Sensors:**
 - Manufacturer: Humidity Sensor
 - Model: Sensirion
 - Resolution: SHT71
 - Uncertainty: 0.01 %
 - Measurement range: 0-100% RH
 - Absolute RH accuracy: $\pm 3\%$ RH (20-80% RH)
 - Repeatability RH: $\pm 0.1\%$ RH
 - Calibration: (For each sensor of pressure, temperature, and salinity, document traceability to an internationally recognized scale, including date and place of last calibration.)
Factory calibrated before purchase.
- Method_References: (Publication(s) describing method)

Sabine, C. (2005): High-resolution ocean and atmosphere pCO₂ time-series measurements. The State of the Ocean and the Ocean Observing System for Climate, Annual Report, Fiscal Year 2004, NOAA/OGP/Office of Climate Observation, Section 3.32a, 246–253.

- Additional Information

- All measurements are at sea surface temperature and atmospheric pressure.
- During the equilibration cycle, a closed loop of air equilibrates with seawater for 10 minutes. Once the equilibration period is complete, the pump stops and the system opens to the atmosphere allowing the pressure to equilibrate with atmospheric pressure. Measurements are recorded for 30 seconds at 2 hertz and then averaged.
- During the air cycle, fresh air is pumped through the detector for 1 minute. Once the pump stops, the system opens to the atmosphere allowing the pressure to equilibrate with atmospheric pressure. Measurements are recorded for 30 seconds at 2 hertz and then averaged.
- The gas streams for both the air cycle and equilibrator cycle are partially dried before entering the detector. The values listed as wet xCO₂ generally have relative humidity levels ranging from 40 to 80 percent. The humidity levels increase over the course of a deployment.
- Sampling occurs every 3 hours. The infrared detector is calibrated at the beginning of every sampling period. Averaged data and standard deviations for each measurement are transmitted back daily.
- To calculate the dry measurements, the water mole fraction in the Licor detector must be known. A relative humidity sensor is located immediately downstream of the detector.

- As part of the QC process, each data set is compared with the Marine Boundary Layer (MBL) data from GlobalView-CO₂. The CO₂ air data from this deployment, Jul 2005 to Jun 2006, were -1.1 ± 0.9 umol/mol on average of the MBL data and therefore no correction was applied to the data.

GLOBALVIEW-CO₂: Cooperative Atmospheric Data Integration Project - Carbon Dioxide. CD-ROM, NOAA ESRL, Boulder, Colorado [Also available on Internet via anonymous FTP to ftp.cmdl.noaa.gov, Path: ccg/co2/GLOBALVIEW], 2010

- During the QC process, an adjustment to the Licor pressure is also made based on each sensor's bias to barometric pressure as measured in the lab. We have not yet run this test on this system.

- No data = -9.999 or -999

- Data_set_References: (Publication(s) describing data set) None
- Citation: (How to cite this data set) Sabine, C. 2006. High-resolution ocean and atmosphere pCO₂ time-series measurements from mooring TAO170W.

• **Data_Set_Link:**

- URL*: http://www.pmel.noaa.gov/co2/moorings/eq_pco2/eq_pco2.htm
- Label*: PMEL CO₂ Group – TAO170W mooring

- Link_Note: (Optional instructions or remarks)(m s t)

Quality Flags definitions:

- 2 = Acceptable measurement;
- 3 = Questionable measurement;
- 4 = Bad measurement
- 5 = Not reported;
- 9 = Sample not drawn for this measurement from this bottle.

Quality Flag Log for this dataset.

Date	Measurement	Value (Dry)	Flag	Comments
8/30/2005 9:16	xCO ₂ _SW	450.9671207	3	CO ₂ data submitted was adjusted by - 7 ppm b/c span calibration was off as predicted by change in Licor temperature
8/30/2005 9:16	xCO ₂ _Air	378.5364028	3	CO ₂ data submitted was adjusted by - 7 ppm b/c span calibration was off as predicted by change in Licor temperature
10/2/2005 0:16	xCO ₂ _Air	376.8618187	4	bad CO ₂ air - high st dev
10/3/2005 9:16	xCO ₂ _Air	376.2795913	4	bad CO ₂ air - high st dev
10/5/2005 6:16	xCO ₂ _SW	466.5008834	3	CO ₂ data submitted was adjusted by + 7 ppm b/c span calibration was off as predicted by change in Licor temperature
10/5/2005 6:16	xCO ₂ _Air	377.5368598	3	CO ₂ data submitted was adjusted by + 7 ppm b/c span calibration was off as predicted by change in Licor temperature
10/21/2005 6:16	xCO ₂ _SW	468.407433	3	CO ₂ data submitted was adjusted by + 6 ppm b/c span calibration was off as predicted by change in Licor temperature
10/21/2005 6:16	xCO ₂ _Air	376.9415954	3	CO ₂ data submitted was adjusted by + 6 ppm b/c span calibration was off as predicted by change in Licor temperature
12/20/2005 6:16	xCO ₂ _SW	518.1153777	3	likely bad CO ₂ sw data due to equilibrator pump pressure changes
12/20/2005 9:16	xCO ₂ _SW	503.1483892	3	likely bad CO ₂ sw data due to equilibrator pump pressure changes

12/20/2005 15:16 pressure changes	xCO2_SW	522.5484216	3	likely bad CO2 sw data due to equilibrator pump
12/21/2005 3:16 pressure changes	xCO2_SW	508.9900597	3	likely bad CO2 sw data due to equilibrator pump
12/21/2005 6:16 pressure changes	xCO2_SW	518.1818316	3	likely bad CO2 sw data due to equilibrator pump
12/21/2005 12:16 pressure changes	xCO2_SW	510.4397582	3	likely bad CO2 sw data due to equilibrator pump
12/21/2005 15:16 pressure changes	xCO2_SW	505.2040262	3	likely bad CO2 sw data due to equilibrator pump
12/21/2005 18:16 pressure changes	xCO2_SW	524.0755351	3	likely bad CO2 sw data due to equilibrator pump
12/22/2005 3:16 pressure changes	xCO2_SW	524.6902247	3	likely bad CO2 sw data due to equilibrator pump
12/22/2005 6:16 pressure changes	xCO2_SW	508.3596194	3	likely bad CO2 sw data due to equilibrator pump
12/22/2005 9:16 pressure changes	xCO2_SW	514.3212148	3	likely bad CO2 sw data due to equilibrator pump
12/25/2005 15:16 pressure changes	xCO2_SW	540.8496226	3	likely bad CO2 sw data due to equilibrator pump
12/25/2005 18:16 pressure changes	xCO2_SW	511.6101123	3	likely bad CO2 sw data due to equilibrator pump
12/25/2005 21:16 pressure changes	xCO2_SW	514.236961	3	likely bad CO2 sw data due to equilibrator pump
12/26/2005 0:16 pressure changes	xCO2_SW	506.6451206	3	likely bad CO2 sw data due to equilibrator pump
12/26/2005 3:16 pressure changes	xCO2_SW	498.9669119	3	likely bad CO2 sw data due to equilibrator pump
12/26/2005 9:16 pressure changes	xCO2_SW	502.1340406	3	likely bad CO2 sw data due to equilibrator pump
12/26/2005 12:16 pressure changes	xCO2_SW	501.4924361	3	likely bad CO2 sw data due to equilibrator pump
12/28/2005 0:16 pressure changes	xCO2_SW	499.4281215	3	likely bad CO2 sw data due to equilibrator pump
1/6/2006 3:16 changes	xCO2_SW	514.759725	3	likely bad CO2 sw data due to equilibrator pump pressure
1/6/2006 6:16 changes	xCO2_SW	499.9180408	3	likely bad CO2 sw data due to equilibrator pump pressure
1/6/2006 9:16 changes	xCO2_SW	490.0682195	3	likely bad CO2 sw data due to equilibrator pump pressure
1/6/2006 12:16 changes	xCO2_SW	491.9257796	3	likely bad CO2 sw data due to equilibrator pump pressure
1/6/2006 15:16 changes	xCO2_SW	497.7038905	3	likely bad CO2 sw data due to equilibrator pump pressure
1/6/2006 18:16 changes	xCO2_SW	496.319652	3	likely bad CO2 sw data due to equilibrator pump pressure
1/6/2006 21:16 changes	xCO2_SW	521.2000413	3	likely bad CO2 sw data due to equilibrator pump pressure
1/7/2006 0:16 changes	xCO2_SW	519.6981766	3	likely bad CO2 sw data due to equilibrator pump pressure
1/7/2006 3:16 changes	xCO2_SW	513.446074	3	likely bad CO2 sw data due to equilibrator pump pressure
1/7/2006 6:16 changes	xCO2_SW	503.7906095	3	likely bad CO2 sw data due to equilibrator pump pressure
1/7/2006 9:16 changes	xCO2_SW	490.4706087	3	likely bad CO2 sw data due to equilibrator pump pressure
1/7/2006 12:16 changes	xCO2_SW	496.2067638	3	likely bad CO2 sw data due to equilibrator pump pressure

1/7/2006 15:16	xCO2_SW	500.3551559	3	likely bad CO2 sw data due to equilibrator pump pressure changes
1/7/2006 18:16	xCO2_SW	490.5618987	3	likely bad CO2 sw data due to equilibrator pump pressure changes
1/7/2006 21:16	xCO2_SW	488.499372	3	likely bad CO2 sw data due to equilibrator pump pressure changes
1/8/2006 0:16	xCO2_SW	515.3300187	3	likely bad CO2 sw data due to equilibrator pump pressure changes
1/8/2006 3:16	xCO2_SW	506.9798149	3	likely bad CO2 sw data due to equilibrator pump pressure changes
1/8/2006 6:16	xCO2_SW	513.2518281	3	likely bad CO2 sw data due to equilibrator pump pressure changes
1/8/2006 9:16	xCO2_SW	490.7943947	3	likely bad CO2 sw data due to equilibrator pump pressure changes
1/8/2006 12:16	xCO2_SW	490.3219553	3	likely bad CO2 sw data due to equilibrator pump pressure changes
1/8/2006 15:16	xCO2_SW	487.0168551	3	likely bad CO2 sw data due to equilibrator pump pressure changes
1/8/2006 18:16	xCO2_SW	484.5431157	3	likely bad CO2 sw data due to equilibrator pump pressure changes
1/8/2006 21:16	xCO2_SW	508.9016336	3	likely bad CO2 sw data due to equilibrator pump pressure changes
1/9/2006 0:16	xCO2_SW	495.6294669	3	likely bad CO2 sw data due to equilibrator pump pressure changes
1/9/2006 3:16	xCO2_SW	511.5534378	3	likely bad CO2 sw data due to equilibrator pump pressure changes
1/9/2006 6:16	xCO2_SW	500.1363417	3	likely bad CO2 sw data due to equilibrator pump pressure changes
1/9/2006 9:16	xCO2_SW	483.378164	3	likely bad CO2 sw data due to equilibrator pump pressure changes
1/9/2006 12:16	xCO2_SW	488.0828572	3	likely bad CO2 sw data due to equilibrator pump pressure changes
1/9/2006 15:16	xCO2_SW	487.0264467	3	likely bad CO2 sw data due to equilibrator pump pressure changes
1/9/2006 18:16	xCO2_SW	487.1660945	3	likely bad CO2 sw data due to equilibrator pump pressure changes
1/9/2006 21:16	xCO2_SW	507.721085	3	likely bad CO2 sw data due to equilibrator pump pressure changes
1/10/2006 0:16	xCO2_SW	505.6653026	3	likely bad CO2 sw data due to equilibrator pump pressure changes
1/10/2006 3:16	xCO2_SW	530.6486053	3	likely bad CO2 sw data due to equilibrator pump pressure changes
1/10/2006 12:16	xCO2_SW	517.2093342	3	likely bad CO2 sw data due to equilibrator pump pressure changes
1/10/2006 15:16	xCO2_SW	511.6620767	3	likely bad CO2 sw data due to equilibrator pump pressure changes
1/11/2006 0:16	xCO2_SW	523.5003865	3	likely bad CO2 sw data due to equilibrator pump pressure changes
1/11/2006 3:16	xCO2_SW	524.4808071	3	likely bad CO2 sw data due to equilibrator pump pressure changes
1/11/2006 6:16	xCO2_SW	510.1721477	3	likely bad CO2 sw data due to equilibrator pump pressure changes
1/11/2006 9:16	xCO2_SW	498.841858	3	likely bad CO2 sw data due to equilibrator pump pressure changes
1/11/2006 12:16	xCO2_SW	494.049091	3	likely bad CO2 sw data due to equilibrator pump pressure changes
1/11/2006 15:16	xCO2_SW	503.1888244	3	likely bad CO2 sw data due to equilibrator pump pressure changes

1/11/2006 18:16 pressure changes	xCO2_SW	488.8024031	3	likely bad CO2 sw data due to equilibrator pump
1/11/2006 21:16 pressure changes	xCO2_SW	491.1373978	3	likely bad CO2 sw data due to equilibrator pump
1/12/2006 0:16 changes	xCO2_SW	506.3983179	3	likely bad CO2 sw data due to equilibrator pump pressure
1/12/2006 3:16 changes	xCO2_SW	511.0299335	3	likely bad CO2 sw data due to equilibrator pump pressure
1/12/2006 6:16 changes	xCO2_SW	489.6945961	3	likely bad CO2 sw data due to equilibrator pump pressure
1/12/2006 9:16 changes	xCO2_SW	485.2395544	3	likely bad CO2 sw data due to equilibrator pump pressure
1/12/2006 12:16 pressure changes	xCO2_SW	491.5036477	3	likely bad CO2 sw data due to equilibrator pump
1/12/2006 15:16 pressure changes	xCO2_SW	491.3122405	3	likely bad CO2 sw data due to equilibrator pump
1/12/2006 18:16 pressure changes	xCO2_SW	493.6295371	3	likely bad CO2 sw data due to equilibrator pump
1/12/2006 21:16 pressure changes	xCO2_SW	487.4291242	3	likely bad CO2 sw data due to equilibrator pump
1/13/2006 0:16 changes	xCO2_SW	493.7332094	3	likely bad CO2 sw data due to equilibrator pump pressure
1/13/2006 3:16 changes	xCO2_SW	503.8003378	3	likely bad CO2 sw data due to equilibrator pump pressure
1/13/2006 6:16 changes	xCO2_SW	494.3595806	3	likely bad CO2 sw data due to equilibrator pump pressure
1/13/2006 9:16 changes	xCO2_SW	489.6316164	3	likely bad CO2 sw data due to equilibrator pump pressure
1/13/2006 12:16 pressure changes	xCO2_SW	487.7018545	3	likely bad CO2 sw data due to equilibrator pump
1/13/2006 15:16 pressure changes	xCO2_SW	488.9790977	3	likely bad CO2 sw data due to equilibrator pump
1/13/2006 18:16 pressure changes	xCO2_SW	497.4193459	3	likely bad CO2 sw data due to equilibrator pump
1/13/2006 21:16 pressure changes	xCO2_SW	500.7126622	3	likely bad CO2 sw data due to equilibrator pump
1/14/2006 0:16 changes	xCO2_SW	518.4707921	3	likely bad CO2 sw data due to equilibrator pump pressure
1/14/2006 3:16 changes	xCO2_SW	508.7525133	3	likely bad CO2 sw data due to equilibrator pump pressure
1/14/2006 6:16 changes	xCO2_SW	498.0857859	3	likely bad CO2 sw data due to equilibrator pump pressure
1/14/2006 9:16 changes	xCO2_SW	496.1781815	3	likely bad CO2 sw data due to equilibrator pump pressure
1/14/2006 12:16 pressure changes	xCO2_SW	491.0044914	3	likely bad CO2 sw data due to equilibrator pump
1/14/2006 15:16 pressure changes	xCO2_SW	487.4323125	3	likely bad CO2 sw data due to equilibrator pump
1/14/2006 18:16 pressure changes	xCO2_SW	486.6377752	3	likely bad CO2 sw data due to equilibrator pump
1/14/2006 21:16 pressure changes	xCO2_SW	490.5640241	3	likely bad CO2 sw data due to equilibrator pump
1/15/2006 0:16 changes	xCO2_SW	492.7974537	3	likely bad CO2 sw data due to equilibrator pump pressure
1/15/2006 3:16 changes	xCO2_SW	488.6952904	3	likely bad CO2 sw data due to equilibrator pump pressure
1/15/2006 6:16 changes	xCO2_SW	484.3134	3	likely bad CO2 sw data due to equilibrator pump pressure

1/15/2006 9:16	xCO2_SW	487.1143935	3	likely bad CO2 sw data due to equilibrator pump pressure changes
1/15/2006 12:16	xCO2_SW	483.3218222	3	likely bad CO2 sw data due to equilibrator pump pressure changes
1/15/2006 15:16	xCO2_SW	487.4834044	3	likely bad CO2 sw data due to equilibrator pump pressure changes
1/15/2006 18:16	xCO2_SW	482.2172813	3	likely bad CO2 sw data due to equilibrator pump pressure changes
1/15/2006 21:16	xCO2_SW	484.8933587	3	likely bad CO2 sw data due to equilibrator pump pressure changes
1/16/2006 0:16	xCO2_SW	488.9019534	3	likely bad CO2 sw data due to equilibrator pump pressure changes
1/16/2006 3:16	xCO2_SW	527.3880835	3	likely bad CO2 sw data due to equilibrator pump pressure changes
1/16/2006 9:16	xCO2_SW	510.1788819	3	likely bad CO2 sw data due to equilibrator pump pressure changes
1/16/2006 12:16	xCO2_SW	502.913791	3	likely bad CO2 sw data due to equilibrator pump pressure changes
1/16/2006 15:16	xCO2_SW	494.5128551	3	likely bad CO2 sw data due to equilibrator pump pressure changes
1/16/2006 18:16	xCO2_SW	485.7969158	3	likely bad CO2 sw data due to equilibrator pump pressure changes
1/16/2006 21:16	xCO2_SW	484.3024096	3	likely bad CO2 sw data due to equilibrator pump pressure changes
1/17/2006 0:16	xCO2_SW	501.839443	3	likely bad CO2 sw data due to equilibrator pump pressure changes
1/17/2006 3:16	xCO2_SW	506.7008978	3	likely bad CO2 sw data due to equilibrator pump pressure changes
1/17/2006 6:16	xCO2_SW	509.6296349	3	likely bad CO2 sw data due to equilibrator pump pressure changes
1/17/2006 9:16	xCO2_SW	497.118339	3	likely bad CO2 sw data due to equilibrator pump pressure changes
1/17/2006 12:16	xCO2_SW	507.194927	3	likely bad CO2 sw data due to equilibrator pump pressure changes
1/17/2006 15:16	xCO2_SW	492.512676	3	likely bad CO2 sw data due to equilibrator pump pressure changes
1/17/2006 18:16	xCO2_SW	500.5730211	3	likely bad CO2 sw data due to equilibrator pump pressure changes
1/17/2006 21:16	xCO2_SW	488.4521721	3	likely bad CO2 sw data due to equilibrator pump pressure changes
1/18/2006 0:16	xCO2_SW	496.3796693	3	likely bad CO2 sw data due to equilibrator pump pressure changes
1/18/2006 3:16	xCO2_SW	503.2408646	3	likely bad CO2 sw data due to equilibrator pump pressure changes
1/18/2006 6:16	xCO2_SW	503.5185867	3	likely bad CO2 sw data due to equilibrator pump pressure changes
1/18/2006 9:16	xCO2_SW	508.718546	3	likely bad CO2 sw data due to equilibrator pump pressure changes
1/18/2006 12:16	xCO2_SW	506.5999284	3	likely bad CO2 sw data due to equilibrator pump pressure changes
1/18/2006 15:16	xCO2_SW	488.0695711	3	likely bad CO2 sw data due to equilibrator pump pressure changes
1/18/2006 18:16	xCO2_SW	505.8814398	3	likely bad CO2 sw data due to equilibrator pump pressure changes
1/18/2006 21:16	xCO2_SW	504.9328455	3	likely bad CO2 sw data due to equilibrator pump pressure changes
1/19/2006 0:16	xCO2_SW	511.9722653	3	likely bad CO2 sw data due to equilibrator pump pressure changes

1/19/2006 6:16	xCO2_SW	516.0951177	3	likely bad CO2 sw data due to equilibrator pump pressure changes
1/21/2006 0:16	xCO2_SW	515.327725	3	likely bad CO2 sw data due to equilibrator pump pressure changes
1/21/2006 3:16	xCO2_SW	515.9186602	3	likely bad CO2 sw data due to equilibrator pump pressure changes
1/21/2006 6:16	xCO2_SW	503.2229447	3	likely bad CO2 sw data due to equilibrator pump pressure changes
1/21/2006 9:16	xCO2_SW	510.659431	3	likely bad CO2 sw data due to equilibrator pump pressure changes
1/21/2006 12:16	xCO2_SW	504.9244517	3	likely bad CO2 sw data due to equilibrator pump pressure changes
2/1/2006 3:16	xCO2_SW	519.480524	3	likely bad CO2 sw data due to equilibrator pump pressure changes
2/1/2006 6:16	xCO2_SW	524.7744895	3	likely bad CO2 sw data due to equilibrator pump pressure changes
2/1/2006 9:16	xCO2_SW	495.7429624	3	likely bad CO2 sw data due to equilibrator pump pressure changes
2/1/2006 12:16	xCO2_SW	496.1846148	3	likely bad CO2 sw data due to equilibrator pump pressure changes
2/1/2006 15:16	xCO2_SW	527.9774556	3	likely bad CO2 sw data due to equilibrator pump pressure changes
2/1/2006 18:16	xCO2_SW	539.69588	3	likely bad CO2 sw data due to equilibrator pump pressure changes
2/1/2006 21:16	xCO2_SW	502.2184407	3	likely bad CO2 sw data due to equilibrator pump pressure changes
2/2/2006 0:16	xCO2_SW	497.5279111	3	likely bad CO2 sw data due to equilibrator pump pressure changes
2/2/2006 3:16	xCO2_SW	538.1691742	3	likely bad CO2 sw data due to equilibrator pump pressure changes
2/2/2006 6:16	xCO2_SW	542.3128959	3	likely bad CO2 sw data due to equilibrator pump pressure changes
2/2/2006 9:16	xCO2_SW	530.1243844	3	likely bad CO2 sw data due to equilibrator pump pressure changes
2/2/2006 12:16	xCO2_SW	490.6455272	3	likely bad CO2 sw data due to equilibrator pump pressure changes
2/2/2006 15:16	xCO2_SW	524.067271	3	likely bad CO2 sw data due to equilibrator pump pressure changes
2/2/2006 18:16	xCO2_SW	535.5324402	3	likely bad CO2 sw data due to equilibrator pump pressure changes
2/2/2006 21:16	xCO2_SW	520.0856148	3	likely bad CO2 sw data due to equilibrator pump pressure changes
2/3/2006 0:16	xCO2_SW	535.4047447	3	likely bad CO2 sw data due to equilibrator pump pressure changes
2/3/2006 3:16	xCO2_SW	518.7220878	3	likely bad CO2 sw data due to equilibrator pump pressure changes
2/3/2006 6:16	xCO2_SW	529.6110031	3	likely bad CO2 sw data due to equilibrator pump pressure changes
2/3/2006 9:16	xCO2_SW	509.1274307	3	likely bad CO2 sw data due to equilibrator pump pressure changes
2/3/2006 12:16	xCO2_SW	494.7418764	3	likely bad CO2 sw data due to equilibrator pump pressure changes
2/3/2006 15:16	xCO2_SW	531.7215726	3	likely bad CO2 sw data due to equilibrator pump pressure changes
2/3/2006 18:16	xCO2_SW	522.9808377	3	likely bad CO2 sw data due to equilibrator pump pressure changes
2/3/2006 21:16	xCO2_SW	543.3180409	3	likely bad CO2 sw data due to equilibrator pump pressure changes

2/4/2006 0:16	xCO2_SW	530.9781464	3	likely bad CO2 sw data due to equilibrator pump pressure changes
2/4/2006 3:16	xCO2_SW	527.5393214	3	likely bad CO2 sw data due to equilibrator pump pressure changes
2/4/2006 6:16	xCO2_SW	524.4470281	3	likely bad CO2 sw data due to equilibrator pump pressure changes
2/4/2006 9:16	xCO2_SW	511.5831124	3	likely bad CO2 sw data due to equilibrator pump pressure changes
2/4/2006 12:16	xCO2_SW	493.3105685	3	likely bad CO2 sw data due to equilibrator pump pressure changes
2/4/2006 15:16	xCO2_SW	492.9828832	3	likely bad CO2 sw data due to equilibrator pump pressure changes
2/4/2006 18:16	xCO2_SW	526.5375541	3	likely bad CO2 sw data due to equilibrator pump pressure changes
2/4/2006 21:16	xCO2_SW	534.2213549	3	likely bad CO2 sw data due to equilibrator pump pressure changes
2/5/2006 0:16	xCO2_SW	542.4716022	3	likely bad CO2 sw data due to equilibrator pump pressure changes
2/5/2006 3:16	xCO2_SW	528.7129172	3	likely bad CO2 sw data due to equilibrator pump pressure changes
2/5/2006 6:16	xCO2_SW	513.75906	3	likely bad CO2 sw data due to equilibrator pump pressure changes
2/5/2006 9:16	xCO2_SW	536.196561	3	likely bad CO2 sw data due to equilibrator pump pressure changes
2/5/2006 12:16	xCO2_SW	533.5824382	3	likely bad CO2 sw data due to equilibrator pump pressure changes
2/5/2006 15:16	xCO2_SW	532.9926856	3	likely bad CO2 sw data due to equilibrator pump pressure changes
2/5/2006 18:16	xCO2_SW	529.3807394	3	likely bad CO2 sw data due to equilibrator pump pressure changes
2/5/2006 21:16	xCO2_SW	532.5538683	3	likely bad CO2 sw data due to equilibrator pump pressure changes
2/6/2006 0:16	xCO2_SW	530.6545189	3	likely bad CO2 sw data due to equilibrator pump pressure changes
2/6/2006 3:16	xCO2_SW	545.8310448	3	likely bad CO2 sw data due to equilibrator pump pressure changes
2/6/2006 6:16	xCO2_SW	543.9583011	3	likely bad CO2 sw data due to equilibrator pump pressure changes
2/6/2006 9:16	xCO2_SW	520.5094142	3	likely bad CO2 sw data due to equilibrator pump pressure changes
2/6/2006 12:16	xCO2_SW	515.1577033	3	likely bad CO2 sw data due to equilibrator pump pressure changes
2/6/2006 15:16	xCO2_SW	522.1590672	3	likely bad CO2 sw data due to equilibrator pump pressure changes
2/6/2006 18:16	xCO2_SW	534.4542081	3	likely bad CO2 sw data due to equilibrator pump pressure changes
2/6/2006 21:16	xCO2_SW	533.9524366	3	likely bad CO2 sw data due to equilibrator pump pressure changes
2/7/2006 0:16	xCO2_SW	540.172625	3	likely bad CO2 sw data due to equilibrator pump pressure changes
2/7/2006 3:16	xCO2_SW	540.8584368	3	likely bad CO2 sw data due to equilibrator pump pressure changes
2/7/2006 3:16	xCO2_Air	334.2251336	4	bad CO2 air data
2/7/2006 6:16	xCO2_SW	534.4340066	3	likely bad CO2 sw data due to equilibrator pump pressure changes
2/7/2006 9:16	xCO2_SW	529.3891077	3	likely bad CO2 sw data due to equilibrator pump pressure changes

2/7/2006 12:16	xCO2_SW	498.5785501	3	likely bad CO2 sw data due to equilibrator pump pressure changes
2/7/2006 15:16	xCO2_SW	529.3876783	3	likely bad CO2 sw data due to equilibrator pump pressure changes
2/7/2006 18:16	xCO2_SW	501.8009314	3	likely bad CO2 sw data due to equilibrator pump pressure changes
2/7/2006 21:16	xCO2_SW	507.9396613	3	likely bad CO2 sw data due to equilibrator pump pressure changes
2/8/2006 0:16	xCO2_SW	527.8717119	3	likely bad CO2 sw data due to equilibrator pump pressure changes
2/8/2006 3:16	xCO2_SW	516.6627538	3	likely bad CO2 sw data due to equilibrator pump pressure changes
2/8/2006 6:16	xCO2_SW	509.929365	3	likely bad CO2 sw data due to equilibrator pump pressure changes
2/10/2006 9:16	xCO2_SW	513.8952907	3	likely bad CO2 sw data due to equilibrator pump pressure changes
2/10/2006 12:16	xCO2_SW	494.4028282	3	likely bad CO2 sw data due to equilibrator pump pressure changes
2/10/2006 15:16	xCO2_SW	494.4380023	3	likely bad CO2 sw data due to equilibrator pump pressure changes
2/10/2006 18:16	xCO2_SW	518.5773381	3	likely bad CO2 sw data due to equilibrator pump pressure changes
2/10/2006 21:16	xCO2_SW	524.6715399	3	likely bad CO2 sw data due to equilibrator pump pressure changes
2/11/2006 0:16	xCO2_SW	550.671168	3	likely bad CO2 sw data due to equilibrator pump pressure changes
2/11/2006 3:16	xCO2_SW	535.7903262	3	likely bad CO2 sw data due to equilibrator pump pressure changes
2/11/2006 6:16	xCO2_SW	540.9805059	3	likely bad CO2 sw data due to equilibrator pump pressure changes
2/14/2006 9:16	xCO2_SW	481.6144349	4	bad CO2 air and sw data - O2 and RH measurements
2/14/2006 9:16	xCO2_Air	375.3070647	4	bad CO2 air and sw data - O2 and RH measurements
2/14/2006 12:16	xCO2_SW	470.1097710	4	bad CO2 air and sw data - O2 and RH measurements
2/14/2006 12:16	xCO2_Air	375.1759777	4	bad CO2 air and sw data - O2 and RH measurements
2/14/2006 15:16	xCO2_SW	470.0822504	4	bad CO2 air and sw data - O2 and RH measurements
2/14/2006 15:16	xCO2_Air	375.0644501	4	bad CO2 air and sw data - O2 and RH measurements
2/14/2006 18:16	xCO2_SW	464.9290660	4	bad CO2 air and sw data - O2 and RH measurements
2/14/2006 18:16	xCO2_Air	374.9539250	4	bad CO2 air and sw data - O2 and RH measurements
2/14/2006 21:16	xCO2_SW	464.6182745	4	bad CO2 air and sw data - O2 and RH measurements
2/14/2006 21:16	xCO2_Air	373.5538886	4	bad CO2 air and sw data - O2 and RH measurements
2/15/2006 0:16	xCO2_SW	474.3199853	4	bad CO2 air and sw data - O2 and RH measurements
2/15/2006 0:16	xCO2_Air	375.1403355	4	bad CO2 air and sw data - O2 and RH measurements
2/15/2006 3:16	xCO2_SW	476.0080608	4	bad CO2 air and sw data - O2 and RH measurements
2/15/2006 3:16	xCO2_Air	373.6839111	4	bad CO2 air and sw data - O2 and RH measurements
2/15/2006 6:16	xCO2_SW	484.3435513	4	bad CO2 air and sw data - O2 and RH measurements
2/15/2006 6:16	xCO2_Air	374.7046032	4	bad CO2 air and sw data - O2 and RH measurements
3/17/2006 18:16	xCO2_SW	460.8725226	4	bad CO2 air and sw data
3/17/2006 18:16	xCO2_Air	334.6111935	4	bad CO2 air and sw data
3/22/2006 15:16	xCO2_SW	478.521289	3	CO2 data submitted was adjusted by - 6 ppm b/c span calibration was off as predicted by change in Licor temperature

3/22/2006 15:16 xCO2_Air 380.7690318 3 CO2 data submitted was adjusted by - 6 ppm b/c span calibration was off as predicted by change in Licor temperature
3/25/2006 3:16 xCO2_SW 475.9918243 3 CO2 data submitted was adjusted by + 8 ppm b/c span calibration was off as predicted by change in Licor temperature
3/25/2006 3:16 xCO2_Air 381.6018112 3 CO2 data submitted was adjusted by + 8 ppm b/c span calibration was off as predicted by change in Licor temperature
3/31/2006 0:16 xCO2_SW 475.8989995 3 CO2 data submitted was adjusted by - 7 ppm b/c span calibration was off as predicted by change in Licor temperature
3/31/2006 0:16 xCO2_Air 380.6327253 3 CO2 data submitted was adjusted by - 7 ppm b/c span calibration was off as predicted by change in Licor temperature
5/6/2006 3:16 xCO2_SW 502.9751432 3 CO2 data submitted was adjusted by - 3 ppm b/c span and zero calibrations were off as predicted by change in Licor temperature
5/6/2006 3:16 xCO2_Air 380.3038105 3 CO2 data submitted was adjusted by - 3 ppm b/c span and zero calibrations were off as predicted by change in Licor temperature
6/17/2006 3:16 xCO2_SW 498.8743039 3 CO2 data submitted was adjusted by + 2 ppm b/c span calibration was off as predicted by change in Licor temperature
6/17/2006 3:16 xCO2_Air 379.5807345 3 CO2 data submitted was adjusted by + 2 ppm b/c span calibration was off as predicted by change in Licor temperature